



# UNITED STATES PATENT AND TRADEMARK OFFICE

*in*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,190	12/17/2001	Matthew Zavracky	0717.2022-000	1518
21005	7590	06/16/2004	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.			AKKAPEDDI, PRASAD R	
530 VIRGINIA ROAD			ART UNIT	
P.O. BOX 9133			PAPER NUMBER	
CONCORD, MA 01742-9133			2871	

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/022,190

Applicant(s)

ZAVRACKY ET AL.

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 10, 13, 14, 23, 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

Art Unit: 2871

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new matter consists of 'single *smooth* alignment edge'. The word '*smooth*' was not in the original specification and a '*single smooth alignment edge*' was not described in the original specification.

Though the single smooth alignment edge was not described in the original specification, the Examiner has continued the prosecution of the application making an assumption that the edge (13) as shown in Fig. 3B as the single smooth alignment edge, that the applicant is referring to.

4. Due to the amendments, previous rejections of claims 5, 18, 28 and 34 under 35 U.S.C. 112 have been withdrawn.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 14-15 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafrir et al. (Shafrir) (U.S. Patent No. 4,514,920).

As to claims 1-2, 14-15 and 34: Shafrir discloses a display module (10), a mounting apparatus (42) for a display panel (12) having a single alignment edge (col. 7, lines 14-15), the display panel (10) including an imaging area (12), a housing (40) having a display opening (42), a display alignment device (86)

coupled to the housing (40), the display alignment device (86) capable of aligning the imaging area of the display panel with the display opening of the housing based on the single alignment edge (Figs. 2 and 3). Shafrir also discloses a non-jagged surface for the panel (12).

As to the newly added limitation 'smooth' in single smooth edge, Shafrir discloses a smooth edge on the display panel (12) as can be seen from Fig. 2.

Shafrir discloses a display alignment device (86) to align the display panel (12) into the housing. However, Shafrir does not disclose a specific number for alignment tolerance. But for any display panel to appear esthetically right for viewing, the panel has to be aligned with the housing within a certain accuracy and that accuracy depending upon the complexity of the display has to be within a small range (less than 2 degrees). As to the single nature of the edge, Shafrir is silent on the degree of the polishing of the edges. However, it is well known that the degree of smoothness depends on the degree of polishing and in optical terms, there is nothing like a perfect smoothness. All edges have some degree of roughness. Hence, Shafrir's edge can be considered to have a single smooth edge.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt a tolerance of less than 2° with respect to alignment with the display opening in order to provide displaying symbols of corporate logos etc., that is economical and offers the possibility of varying the displaying symbols (col. 1, lines 51-68).

Art Unit: 2871

As to claims 35-37: Shafrir discloses two polarizers (20 and 22) and the orientation direction of the two polarizers (col. 3, lines 18-21) and their relation to the display is disclosed in (col. 5, lines 54-68).

7. Claims 3-7, 16-20 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafrir in view of Paolini et al. (paolini) (US 2002/0167624).

Shafrir discloses a display module. However, Shafrir's display module does not include a light source, or a LED or a phosphor to generate white light.

Paolini on the other hand, in disclosing a backlight for a color LCD, discloses a light source, a blue LED (44) and a phosphor to form white light (paragraph 0052), a light pipe (40), a first diffuser and a roughened surface (second diffuser) (Page 4, para 0052 and 0053).

Both Shafrir and Paolini disclose optically transparent spacers (20, 22 in case of Shafrir) and 14 and 24 (in case of Paolini) (polarizers) coupled to the display panel. However, Shafrir does not disclose that the optically transparent spacer is coupled to the backlight of the display panel. Paolini does disclose that the optically transparent spacer (polarizing filter 14) is coupled to the backlight (Fig. 6). The polarization angle of the polarizer provides an alignment to the optical element or the display panel.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the backlight source as disclosed

by Paolini to the display module of Shafrir to enhance the brightness, efficiency and the viewing angle of the display device (paragraphs 002 and 0019).

8. Claims 8-9 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafrir in view of Meyerhofer et al. (Meyerhofer) (U.S. Patent No. 5,619,373).

Shafrir does not disclose a lens positioned adjacent to the display opening nor does he disclose that the lens is a torro lens.

Meyerhofer in disclosing a optical system for head mounted displays, discloses a torroidal (torro) lens (370 a) in front of the display module (305).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the torroidal (torro) lens to equalize angular magnification in both directions (col. 3, lines 39-41).

9. Claims 10-13 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafrir in view of Klubenspies (U.S. Patent No. 6,335,864).

Shafrir discloses a vertical securing portion (56), a registration edge (42) and the alignment of the display panel with the hosing assembly (Figs. 2,3).

However, Shafrir does not disclose that the securing portion comprises a spring and ramp combination.

Klubenspies in disclosing an indicator module, discloses a spring (col. 4, line 41) and ramps (49,50,51) and a carrier (3) for holding the display module.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the specific mounting

Art Unit: 2871

configuration consisting of a combination of a carrier, a spring and a ramp to hold the display with little force and improve reliability of fastening (col. 1, lines 40-54).

10. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shafrir in view of Paolini.

Shafrir discloses the assembly of the module (10) (col. 4, lines 17-49) consisting of a display device with a housing, an opening (Figs. 2-3) and alignment of the panel with the housing.

Shafrir does not disclose a method of coupling a light source to the housing.

Paolini discloses a method of assembly of a color liquid crystal display consisting of a light source (pages 4 and 5).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the light source disclosed by Paolini to the display device of Shafrir to enhance the brightness, efficiency and the viewing angle of the display device (paragraphs 002 and 0019).

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (a) Srivastava et al. (U.S. Patent No. 6,596,195): discloses a phosphor that produces white light when excited by a blue LED source (b) Soules et al. (U.S. Patent No. 6,580,097): discloses that a blue emitting LED is combined with a white emitting phosphor to produce white light (col. 5, lines 52-54).



Art Unit: 2871

***R sponse to Arguments***

12. Applicant's arguments with respect to claims 1, 14 and 34 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 571-272-2285. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

\*\*\*  
PRA

Prasad R Akkapeddi, Ph.D  
Examiner  
Art Unit 2871

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800